

REMARKS/ARGUMENTS

The Office Action mailed September 27, 2004 has been reviewed and carefully considered. Claims 1-14 are pending in this application, with claims 1 and 8 being the only independent claims. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

In the Office Action mailed September 27, 2004, claims 1-14 stand rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 5,831,976 (Lin) in view of U.S. Patent No. 6,128,498 (Benveniste).

Before discussing the cited prior art and the Examiner's rejections of the claims in view of that art, a brief summary of the present invention is appropriate. The present invention relates to a system and method for the dynamic apportionment of channels in a multiplexed radio system. According to the invention, a communication system 10 includes multiple base stations (BSs) 2 controlled by a controller 6 (see Fig. 1; and page 7, lines 11-16). The BSs 2 are multiplexed using time-division duplex (TDD) (page 7, lines 17-20). Each BS 2 employs a plurality of time slots, i.e., channels, for communicating with mobile terminal 4 (page 7, lines 20-21). Some of the BSs coverage areas may overlap so that the slots or channels of the BSs of the overlapping areas interfere with each other (page 8, lines 1-4). In the example described in the specification, the system 10 includes ten BSs 2-1 through 2-10 and each BS 2 employs 15 time slots (page 7, lines 13-14 and 20-21).

Based on a current assessment of which BSs are interfering with each other, the slots of each BS are assigned as one of owned, shared, or avoided (page 8, lines 5-6). If a slot or channel is owned by a first base station, the same slot is assigned as avoided by adjacent base stations which are assessed as interfering with the first base station (page 8, lines 6-10). Slots that are not owned or

avoided, are assigned as shared by each interfering base station (page 8, line 10). Thus, the channels or time slots of each BS are assigned a classification according to the probability of interference.

When a user requests the initiation of communication with BS 2 using a mobile terminal 4, the BS must allocate a channel or slot for the communication (page 8, lines 11-12). The slot or channel to be used is determined by measuring path loss and interference at various slots or channels until a suitable slot or channel is found (page 8, lines 12-14). According to the present invention, the first slots or channels to be tried are slots or channels that are owned and not already in use (page 8, lines 14-15). If none of the owned slots or channels can be used, then the shared slots or channels are tried (page 8, line 20 to page 9, line 4). When quality of service (QoS) is taken into account, communications requiring high quality start measuring slots or channels that are owned (page 9, lines 10-11). Communications which do not require a high quality class start measuring slots or channels assigned as shared, which allows the owned slots or channels to remain available for transmissions requiring high quality class transmissions (page 9, lines 12-14).

Independent claims 1 and 8 each recite "predetermining, for each base station, a classification for each channel according to the probability of interference at the channel with other base stations of the plurality of base stations", "allocating on request a channel according to the predetermined classification and a desired quality class of transmission".

As stated in the Office Action, Lin fails to disclose, teach, or suggest the above limitations. The Examiner alleges that these limitations are disclosed by Benvensite at col. 4, lines 3-15 and the abstract and col. 12, lines 26-44. The rejection is traversed based on the following arguments.

Benveniste discloses a system and method for management of neighbor-channel interference with power control and directed channel assignment. Benveniste describes power control as reducing the power of calls closer to the base station (see col. 6, line 63-65). The term "mixed power control" is described by Benveniste as applying a different power reduction for downlink and uplink scenarios (see, col. 10, lines 7-10). The term "directed channel assignment" in Benveniste relates to assigning lower numbered channels first in one cell and higher numbered channels first in a neighboring cell to avoid neighbor channel interference.

The Examiner alleges that the abstract and col. 4, lines 3-15 of Benveniste disclose predetermining, for each base station, a classification of each channel according to the probability of interference at the channels with other base stations. However, these sections of Benveniste referred to by the Examiner state only that mixed power control and/or direct channel assignment may be used to manage neighbor-channel interference. As described above, power control involves reducing the power of call and has nothing to do with predetermining a classification of each channel. Furthermore, directed channel assignment is an allocation of channels based on a number of the channel and is not based on a predetermined classification.

Accordingly, the power control and directed channel assignment disclosed by Benveniste do not disclose the step of predetermining, for each base station, a classification of each channel according to the probability of interference at the channels with other base stations.

The Examiner further states that col. 12, lines 26-44 discloses allocating a channel according to the predetermined classification and a desired quality class of transmission. However, this section merely describes the directed assignment methodology referred to above in which lower channel numbers are first assigned in one cell while higher channel numbers are first assigned in

another cell to avoid neighbor-channel interference. Accordingly, this allocation described by Benveniste is not based on a predetermined classification of the channel.

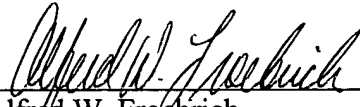
In view of the above amendments and remarks, independent claims 1 and 8 are deemed allowable over Lin in view of Benveniste.

Dependent claims 2-7 and 9-14, each being dependent on one of independent claims 1 and 8, are allowable for the same reasons expressed above with respect to independent claims 1 and 8.

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

Respectfully submitted,

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